

(19) World Intellectual Property  
Organization  
International Bureau



(43) International Publication Date  
30 June 2005 (30.06.2005)

PCT

(10) International Publication Number  
**WO 2005/060123 A1**

(51) International Patent Classification<sup>7</sup>: **H04B 7/06**,  
H04L 1/06

[SE/SE]; Ballongatan 2, 1 tr., S-169 71 Solna (SE).  
**SIGNELL, Svante** [SE/SE]; Ängsullsvägen 170, S-162  
46 Vällingby (SE). **ASTELY, David** [SE/SE]; S:t Eriks-  
gatan 19, 3 tr., S-112 39 Stockholm (SE).

(21) International Application Number:  
PCT/SE2004/001358

(74) Agent: **ALBIHNS STOCKHOLM AB**; P.O. Box 5581,  
Linnégatan 2, S-114 85 Stockholm (SE).

(22) International Filing Date:  
22 September 2004 (22.09.2004)

(81) Designated States (unless otherwise indicated, for every  
kind of national protection available): AE, AG, AL, AM,  
AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN,  
CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI,  
GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE,  
KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD,  
MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG,  
PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM,  
TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM,  
ZW.

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:  
PCT/SE03/02058  
19 December 2003 (19.12.2003) SE

(84) Designated States (unless otherwise indicated, for every  
kind of regional protection available): ARIPO (BW, GH,  
GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM,  
ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM),  
European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI,

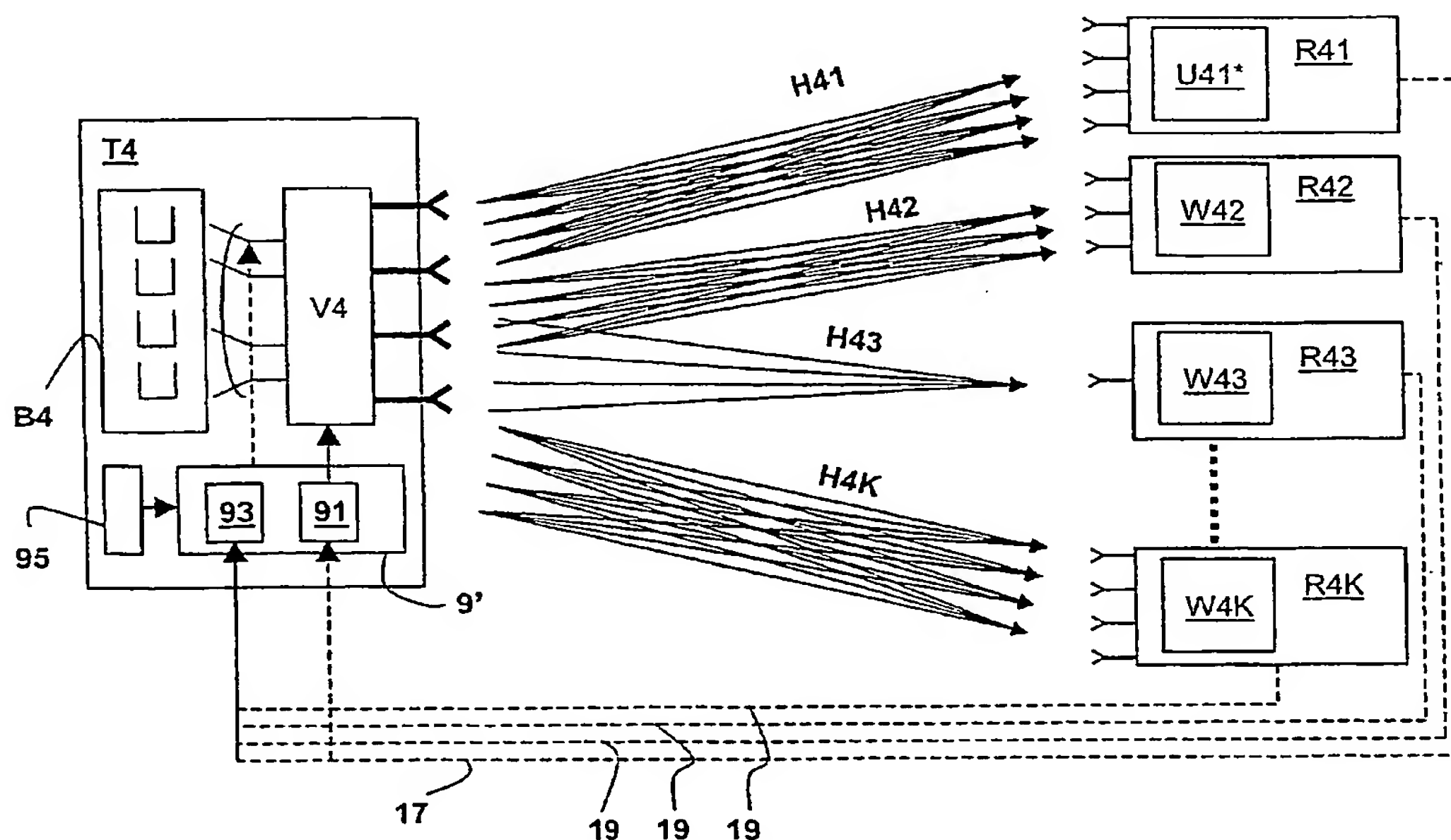
(71) Applicant (for all designated States except US): **TELE-  
FONAKTIEBOLAGET LM ERICSSON** (publ)  
[SE/SE]; S-164 83 Stockholm (SE).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **LARSSON, Peter**

[Continued on next page]

(54) Title: METHOD AND APPARATUS IN A MIMO BASED COMMUNICATION SYSTEM



(57) Abstract: Communication in a MIMO network is optimized by selecting a first set of users comprising at least one user, selecting a second set of users not comprised in the first set, adapting communication parameters for the first set of users according to a first principle suitable, e.g. SVD, adapting communication parameters for the second set of users according to a second principle, e.g. opportunistic MIMO, and transmitting to the first set of user terminals according to the first communication parameters and to the second set of user terminals according to the second communication parameters. In this way, communication with one or a few users can be optimized while network resources can be used in an efficient way also for other users.

WO 2005/060123 A1



FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI,  
SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ,  
GW, ML, MR, NE, SN, TD, TG).

*For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*

**Published:**

— *with international search report*